

k - Insulator, polymer distribution deadend

Manufacturer	Conditions
<u>Dulmison</u>	
Distribution deadend	1. To obtain experience.
H-15 kV-4	2. For use as deadends on distribution lines only.
H-25 kV-6	3. Not recommended for use in areas subject to contamination.
<u>GLP</u>	
DS-15 (15 kV)	1. Same as (1) above.
DS-28 (25 kV)	2. Same as (2) above.
	3. Same as (3) above.
<u>Hubbell (Ohio Brass)</u>	
"Veri*Lite"	1. Same as (1) above.
Type PDI-15 (15 kV)	2. Same as (2) above.
Type PDI-25 (25 kV)	3. Same as (3) above.
Type PDI-35 (35kV)	
<u>K-Line</u>	
Distribution deadend	1. Same as (1) above.
KL-15ASCTM (15 kV line-to-line)	2. Same as (2) above.
KL-28ASCTM (25 kV line-to-line)	3. Same as (3) above.
KL-46CTN (35 kV line-to-line)	
<u>MacLean (Reliable)</u>	
DS-15G (15 kV)	1. Same as (1) above.
DS-15M (15 kV) (metal end fittings)	2. Same as (2) above.
DS-25G (25kV)	3. Same as (3) above.
DS-28M (25 kV) (metal end fittings)	
DS-35G (35 kV)	
DS-35M (35 kV) (metal end fittings)	
<u>Porcelain Products</u>	
Distribution deadend	1. Same as (1) above.
PDEI-15, 15 kV	2. Same as (2) above.
PDEI-25, 25 kV	3. Same as (3) above.

NOTE: When insulators from this page are used, adjust construction drawing material list quantities as necessary. Recommended maximum working load is 5,000 lbs.

ae - Surge (Lightning) Arresters, Substation*

SiC Type				
Manufacturer	Type	Accepted Ratings - kV	Housing	Manufacturer's Classification
ABB	LV	3-20	Porcelain	Distribution
	IVL	3-120	Porcelain	Intermediate
	CPL	3-312	Porcelain	Station
General Electric	Alugard	3, 9, 10, 18	Porcelain	Distribution
Kearney/Cooper Power Systems	Unigap	3, 9, 10, 18	Porcelain	Distribution

MOV Type				
Manufacturer	Type	Accepted Ratings - kV	Housing	Manufacturer's Classification
Hubbell Power Systems (Ohio Brass)	DynaVar			
	VLA	3-27	Porcelain	Station
	VL	3-48	Porcelain	Station
	VN	54-312	Porcelain	Station

*For instructions concerning application at substations, refer to RUS Bulletin 1724E-300, "Guide for the Design of Substations for Electric Borrowers." In the purchase of arresters, care should be taken to select the type and voltage ratings in accordance with the line voltage and the type of construction (grounded or ungrounded).

ae - Surge (Lightning) Arresters, Distribution Class

CONDITION OF ACCEPTANCE: To Obtain Experience

MOV Type				
Manufacturer	Type	Ratings, kV	Housing	Duty
ABB	HMX	9,10,18	Porcelain	Heavy
	XPH	9,10,18,27	Polymer	Heavy
Cooper Power Systems	AZS VariSTAR	9,10,18,27	Porcelain	Normal
	UNS Ultra Sil Housed VariSTAR	9,10,18,27	Polymer	Normal
	UHS Ultra Sil Housed VariSTAR	9,10,18,27	Polymer	Heavy
General Electric	Tranquell, 9L23 Series	9,10,18,27	Polymer	Heavy
Hubbell Power Systems (Ohio Brass)	DynaVar PDV-65	9,10,18,27	Polymer	Normal
	DynaVar PDV-100	9,10,18,27	Polymer	Heavy
Joslyn	ZNP	9,10,18,27	Polymer	Normal
	ZHP	9,10,18,27	Polymer	Heavy
Raychem Corporation	HDA Series	9,10,18,27	Polymer	Normal

MOV Type (Internally Gapped)				
Manufacturer	Type	Ratings, kV	Housing	Duty
Cooper Power Systems	AZL500 VariGAP	9,10,18,27	Porcelain	Heavy
	CPS AZS500 VariGAP	9,10,18,27	Polymer	Normal
	UNG UltraSIL VariGAP	9,10,18,27	Polymer	Normal
	UHG UltraSIL VariGAP	9,10,18,27	Polymer	Heavy

ae - Surge Arrester, Substation*

CONDITION OF ACCEPTANCE: To Obtain Experience

MOV Type				
Manufacturer	Type	Accepted Ratings - kV	Housing	Manufacturer's Classification
ABB	SMX-30	3-312	Porcelain	Station
Cooper Power Systems	VariStar	3-312	Porcelain	Station
	VariStar AZF	3-120	Porcelain	Intermediate
	VariSTAR UI	3-108	Polymer	Intermediate
	VariSTAR US	3-108	Polymer	Station - 3.4 kJ/kV
	VariSTAR UH	3-108	Polymer	Station - 5.6 kJ/kV
General Electric	Tranquell	2.7-612	Porcelain	Station
	Tranquell	3-120	Porcelain	Intermediate
Hubbell Power Systems (Ohio Brass)	PVI-LP	3-72	Polymer	Intermediate
	PVIA	3-72	Polymer	Intermediate
	DynaVar Type PVI	3-144	Polymer	Intermediate
	DynaVar Type PVN	3-228	Polymer	Station
Joslyn	Type ZS	3-240	Porcelain	Station
	Type ZSH	258-468	Porcelain	Station
	Type ZIP	3-120	Polymer	Intermediate
	Type ZSP	3-144	Polymer	Station
MagneTek	ZSE-E2A	3-39	Porcelain	Station
	ZSE-E3A	45-312	Porcelain	Station

*For instructions concerning application at substations refer to RUS Bulletin 1724E-300, "Design Guide for Rural Substations." In the purchase of arresters, care should be taken to select the type and voltage rating in accordance with the line voltage and the type of construction (grounded or ungrounded).

av - Conductor, Service
(Single Conductor)

Manufacturer	Aluminum	Copper
Alcan Cable	x	-
Alcatel Canada Wire	x	-
Conductores Monterrey	x	-
Condumex	x	x
General Cable	x	x
Nehring	x	-
Pirelli Cable	x	x
Rome Cable	x	x
Southwire	x	x

Applicable Specification: ICEA-NEMA Standard S-66-524

Insulation: Cross-linked thermosetting polyethylene or equal.

Conductor: MHD copper or HD (Aluminum 1350) aluminum (Compact or compressed stranded conductor is acceptable.)

Marking: Manufacturer's name and type of insulation shall be clearly shown in durable markings on the surface of the insulation at intervals no greater than 24 inches.

av - Conductor, Service Cable
(Triplex and Quadruplex)

<u>Manufacturer</u>	<u>Aluminum</u>	<u>Copper</u>
ACPC, Inc.	x	-
Alcan Cable	x	-
Alcatel Canada Wire	x	-
Conductores Monterrey	x	-
Condumex	x	x
General Cable	x	x
Hendrix	x	x
Nehring	x	-
Pirelli Cable	x	x
Rome Cable	x	x
Southwire	x	x

Applicable Specifications: RUS Specification D-2, Specifications for 600 Volt Neutral-Supported Secondary Service Drop Cables.

rp - Wildlife Guards

Bushings and Live Parts Covers

<u>Manufacturer</u>	<u>Conditions</u>
<u>Hendrix Wire & Cable</u> Catalog No. BG-9	To obtain experience
<u>Kaddas Enterprises Inc.</u> Catalog No. KE1045A* birdguard Catalog No. KE1066* arrester cap Catalog No. KE1077* transformer bushing cover Catalog No. KE1053* arrester cap Catalog No. KE1064* transformer bushing cover Catalog No. KE 1049* birdguard	To obtain experience

NOTE: The material composition of these items does not contain a flame-retardant unless specified by the manufacturer.

*Specified by manufacturer as being flame-retardant

Anti-Perch Devices

<u>Manufacturer</u>	<u>Conditions</u>
<u>Hendrix Wire & Cable</u> Catalog No. HPP-24	To obtain experience

NOTE: The material composition of these items does not contain a flame-retardant unless specified by the manufacturer.

U he - Enclosures, Sectionalizing Equipment

(200 and 600 amp)

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>Cooper Power Systems</u>	Type VFI, single-phase and three phase, padmounted fault interrupters, 15-35 kV Type R-VAC, three-phase vacuum switchgear, 15-25 kV
<u>Electrical Equipment</u>	Type PSI-PSI/II Series, 15 kV, 25 kV, 600 amp., three-phase switching, and 200 amp., single-phase switching. (When ordering, add suffix B-4) Type PSE Series, 15 kV, 25 kV, 600 amp switch, 200 amp fuse Type PGE Series, 15 kV, 25 kV, SF6 interrupter, 3-phase, 600 amp switch, 200 amp fuse
<u>Elliott</u>	Type EPMR, Single and three-phase, pad-mounted, 25 kV
<u>ERMCO</u>	Type FusePad, single-phase, 200 amp, 15 kV
<u>G & W</u>	Type PVI series, single-phase and three-phase, 200 amp and 600 amp, 15 kV and 25 kV
<u>Hubbell (Chance)</u>	Type LVS (pad-mounted) single-phase and three-phase, vacuum switching equipment, fused or unfused, 200 or 600 amp, 15-25 kV Type AIS padmounted, air insulated switchgear, fused or unfused, 200 or 600 amp, 15 kV or 25 kV

Notes:

1. Enclosures on this page must comply with the deadfront requirements of RUS Spec. U-4.
2. These enclosures have been certified as meeting the requirements of ANSI C57.12.28. A copy of the certification is available from the manufacturer.
3. Single-pole switching of three-phase underground circuits may cause ferroresonance. Refer to RUS Bulletin 61-3.

U hv - Cable, Underground
15 kV and 25 kV Cable

(Alternative Insulation Compound)

Applicable Specification:	RUS Specification U-1
Conductor (15 kV):	Copper or Aluminum - #2 AWG through 1000 kcmil
Conductor (25 kV):	Copper or Aluminum - #1 AWG through 1000 kcmil
Insulation:	Tree-retardant Crosslinked Polyethylene (XLP-TR) (I) indicates Pirelli IE.7100 XLP-TR (II) indicates AT Plastic PowerGuard 320TR (III) indicates Union Carbide HFDB-4202 (IV) indicates Nova Borealis LE 4212
Neutral:	Copper Concentric Neutral
Jacket:	High Molecular Weight Polyethylene
Conditions:	To obtain experience

Manufacturer	Insulation(s)	Flat Strap Neutral Available
Alcatel Canada Wire	XLP-TR (II, III)	No
General Cable	XLP-TR (II, III)	Yes
Hendrix	XLP-TR (III, IV)	No
Pirelli	XLP-TR (I, IV)	Yes
Southwire	XLP-TR (III, IV)	No